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also contributed to a reduction in the spread of viruses, particularly as the cattle are generally kept away from these courtyards fronting the houses.

The ecological significance of these various beliefs and practices is that as the Nilgiri population increased in the nineteenth century and some village streams began to be polluted by this new pressure, the Badagas managed to avoid some contamination by switching from drinking stream water and fresh milk to tea, coffee and sometimes alcohol, all of which would be relatively free of bacterial organisms. The new balance with the environment that this change brought about was certainly one factor in the remarkable increase in the Badaga population ever since the advent of the British (Diagram 1).

At the same time that this change in drinking habits was occurring their eating habits were undergoing an equally radical transformation. In part this was due to the several dozen types of fruit, grain and vegetable introduced from Europe by British settlers and adopted by most Badagas (2.1, Table 2; Hockings 1973: 867). The variety of their diet was thus greatly improved. Also the earlier habit of eating a midday meal, often in open air (Harkness 1832: 111), tended to cease as more and more Badaga adults began working for an hourly or daily wage on the plantations and construction projects initiated by the British, and as increasing numbers of children spent the day in school. In the later nineteenth and early twentieth centuries it thus became usual for Badagas to consume only two meals a day, generally in their own homes, one at sunrise and the other in the evening. The importance of this practice from a hygienic viewpoint was that, because flies are normally active only during daytime, "eating at night or in the early morning may protect food from fly-borne contamination" (Alland 1970: 59). Any change of diet or of custom that tended to reduce the human intake of bacterial organisms was reflected in the greatly increased life expectancy during the past century and a half.

1.8. By the later nineteenth and the twentieth centuries successful exploration of the botanical realm and this steadily increasing Badaga population had, through a process of interaction and by individual experiments, observations of animal browsing, or other acts of discovery about which we can know nothing, developed the third phase in their medical history — the full-fledged therapeutic system described in this book. As an increasingly heavy work-load was

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ment. Today that environment has changed so much socially, economically and intellectually that the old therapeutic system is becoming an anachronism. This change is not simply attributable to the fact that scientific medicine is viewed as "better" in any objective sense. The number of Badagas who die either in hospitals or after being brought home (often prematurely) from them is sufficient to bolster a suspicion to the contrary. Nonetheless scientific medicine has now become the medicine of the urban middle classes in the Nilgiris, many of whom are professionals and are taken as a positive reference group by the rest of the community in these matters. The most progressive of Badagas are already finding their place in the broader urban culture of modern South India; and in this context reliance on an antiquated, indigenous therapeutic system is seen by increasing numbers as an embarrassing reminder of the primitive past. Despite the greater cost that may be involved, many Badagas now patronize Badaga doctors with degrees in scientific medicine. Since these doctors are pillars of the local urban middle class, support of them may be seen as evidence of class emulation on the part of Badaga peasants.

1.9. The simple model shown in Diagram 2 indicates some major ecological relationships in Badaga culture, the basic flow of energy, and the role of therapy in helping maintain this system.

The etic reality of these energy relationships is indisputable: only a brief survey of the ethnographic descriptions of the Badagas would demonstrate this. Yet the Badagas' own point of view on the business of living colours these relationships with the particular characteristics of a particular culture, and the recording of that emic viewpoint is essential for a fuller understanding of the culture and its therapeutics. I find myself in agreement with Frake that one

> must discover those features of objects and events which they regard as significant for defining concepts, formulating propositions, and making decisions. This conception of an ethnography requires that the units by which the data of observation are segmented, ordered, and interrelated be delimited and defined according to contrasts inherent in the data themselves and not according to a priori notions of pertinent descriptive categories. (Frake 1962 : 54)

In line with this valuable prescription, I will present in this study an

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252 visiting affine, for otherwise he will conclude that he is not welcome
[574] in the house. One should eat with one's relatives: "If eaten with ten
people it is milk; if eaten by oneself it is shit." Several proverbs
252 suggest that not all affines are to be made welcome, though: "Is it
539 a bad thing for the affine who has become ruined and came [to us to
eat] a poor quality of finger millet and sour buttermilk?" The use-
less housewife is one who is too lazy to cook regularly: "Not caring
about her husband's hunger, a bad wife will eat the old food herself
[rather than cook]."

Earth-eating

261 2.4. The eating of earths is widespread in South India (Hooper and
Mann 1906: 254). We find that the practice has been reported in
particular from the part of Mysore whence the Badagas fled in the
sixteenth and seventeenth centuries, and that a baked edible clay is
even sold in the bazaars there (Thurston 1901: 121; Hooper and
Mann 1906: 256). In that part of Mysore the consumption of raw or
baked clay was fairly common among women especially, and was
said to bring no ill effects. An informant did however state that
261 among chronic earth-eaters "their appearance suggests that they
164 are suffering from pernicious anaemia; the face being unnaturally
swollen or puffed and the abdomen distended, while the limbs are
shrunk except at the joints, which appear enlarged and are said to
be painful" (Thurston 1901: 121). Early medical officers reported
on the dire consequences of habitual earth-eating, especially men-
tioning anaemia and dysentery (Hooper and Mann 1906: 263-70).
It has not been possible to discover whether the high death-rate due
● [165] to dysentery among Badagas (see 9.7) can be attributed in part to
this habit. Hooper and Mann (1906: 254) reported the practice as
261 widespread throughout India, and as chiefly confined to labourers
[171] and pregnant women, including Badagas. The practice is common
amongst them, pregnant women being especially fond of the earth,
even though older people abuse them for eating it because they do
not think it a foodstuff. The earth, said to have a pleasant taste and
smell, is yellowish-brown in colour, and is called *suttekaḷ*. It is actual-
ly a weathered feldspar, chemically aluminium silicate, and is the
261 same thing as kaolin. Humans do of course need traces of aluminium
146 in their diet. Dietary deficiency where soils are heavily leached might
thus explain the practice; as it perhaps does the eating of charcoal

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without some further notes on body ornaments. Men as well as women usually wear gold earrings, which are still made from melted gold sovereigns. Women also have gold nose-rings, always worn in the left nostril. Gold, silver or brass armlets may be worn by women just above the right elbow. Numerous silver, gold or glass bangles will be on the wrists; men too wore a silver bangle and silver or copper toe-rings until 50 years ago. Silver or steel rings are worn on the fingers of both sexes (Thurston 1909: 81-82). Necklaces of great variety are also favoured by girls. In general, where gold ornaments are too costly women wear them in filagree silver, brass, copper, iron or steel instead (Grigg 1880: 220). Badagas believe that if a person wears gold, the length of his lifetime will be greater. One might think that wearing gold invited theft; but in fact it seems that this did not often occur amongst the Badagas. Throughout the nineteenth century men, when travelling from village to village, carried a walking-staff with a small axe-head in lieu of the handle, for protection. When however they were to walk to the plains on a trading expedition (prior to 1825) they would first divest themselves of all ornaments, including even their silver waist-bands and any richly made cloak. They were clearly very afraid of brigands, even though they travelled in a group of up to 100 men.

This still does not complete the list of ornaments, however. Priests wear a silver ring during each festival. Some of the headmen wear gold or silver "rings of office" on their fingers, given to their ancestors by East India Company officials or even earlier chieftains of Mysore. The headman of Ke:ti wears one called *sinaganige*, which his ancestor seems to have taken from another Badaga headman after a hand-to-hand fight. It is now worshipped in his home every Monday. Such rings can always be given as security against a fine, and are conventionally worth 1,000 rupees in gold coins. Women who go barefoot — still the great majority today — wear silver rings on three or four toes of each foot. (In Southern India slippers are associated mainly with Muslim women and Hindu dancing girls.)

Until about 1930, it was the custom for men to carry non-collapsible umbrellas made of palm leaves on a cane frame. (Such umbrellas can still be seen in Kerala occasionally.) Since the Nilgiri Plateau is very wet for a part of the year (roughly 20 ins. in May-July, and another 30 ins. the rest of the year), these or their more recent Western equivalents often substitute for a walking stick. Until very recently it was thought disrespectful to the men for women to carry

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they are further apart yet. These latter two kinds of spots give little trouble, and spread over the body slowly. Once a person has been afflicted by smallpox or chicken-pox he will never get these diseases again; whereas he may suffer repeatedly from the other two.

In all four diseases (i. e., except the eye disease, 6.37) the patient is weak and feverish, and roughly the same rules are followed in treating them; with the important exception that only in the case of smallpox do people vacate their village. However when any of the other three diseases (excluding the eye disease) prevails in a village there is prohibition on anyone having sexual relations. At such times the headman and other elders spread word of the prohibition.

VARICELLA (*Cikkamma*)

7.2. Everyone gets chicken-pox at some time, generally before his tenth year. At first the parents recognize a fever in the child and so give him the regular treatment for that (6. 69). If it does not cure him by the third or the fifth day they know he has a pox. This could be caused either by the goddess "coming into the child," or by his contacting another person with the disease while they are playing, living together, carrying each other, etc. It is very safe to expose a child to chicken-pox in his third or fourth year, after weaning, but the case can become more serious if he does not get it till after the tenth year. Thus parents welcome the disease in children while they are small and not much trouble, and will purposely make a young child eat with another who has the disease; but even such encouragement sometimes fails to work. Very rarely this procedure brings tragic results, as when in one village eleven children died of chicken-pox within 20 days.

If the first signs of fever have not responded to the treatment, on the third or fifth day some spots will be found at one of the three crucial zones mentioned above (7.1). They can only be found in the morning; and until these spots are found the child is not washed. A fever may last for as long as 15 days without any spots appearing (cf. 6.67).

During the early phase of chicken-pox the child

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one bed, on which there lies a walking-stick for each dead adult, or a smaller stick for a child. In such a funeral the ritual acts and prayers are performed for each male first, and then for each female, in order of generation seniority and not of absolute age at death. If people of different phratries have died in the same hamlet then a separate bed is used for the sticks representing the members of each. Rituals are done for the superior phratry first, unless the dead members of that phratry were visitors from another hamlet. Finally, if some visitors have died there will be two separate beds for the funerals of agnates and affines within the same phratry.

RUBELLA (*kasare*)

7.4. *Kasare*, probably identifiable with measles, kills scarcely one in a hundred of those who do not follow the restrictions, whereas smallpox kills one in two of those who ignore the treatment procedure. Nonetheless measles should not be taken lightly: as one ironic proverb puts the matter, "Measles does not harm one; the eye is ungrateful [for what it sees]." All the rules for treating smallpox should be followed, except that an infected hamlet is not deserted. The water-sprinkling treatment, begun on the third day after the disease has been recognized by its widely scattered spots, has usually cured it by the seventh day. This is followed by the customary hot bath and inhalation of smoke (7. 2).

PLAGUE (*ili sattara*)

7.5. Plague was not uncommon early in this century, and was known to be brought by rats (*Rattus rattus*). It is not much of a problem now however, as a medical missionary has observed:

> [Ketti] village has been harbouring the infection of plague for the last 18 months. But although there were as many as 138 rat falls reported in one week, we only know of four humans attacked. This clearly demonstrates the value of prompt preventative measures [by Government health authorities]. Owing to this incidence of plague fewer people have been coming into Ketti from

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164 **CHOLERA** (*ba:ndi be:di*)

7.6. Cholera is primarily an epidemic of the low country and is reportedly introduced to the Nilgiri Hills by inhabitants who visit the plains (Orton 1831: 406; Madras 1928: 63; Ketti Medical Mission 1943: 5). It is said to be caused by an evil god or goddess, and is one of the epidemics loosely labelled *na:du no:* ("countrywide illness").

Within two hours of a person's being attacked by cholera he will begin constant vomiting and diarrhoea. There is no accompanying fever; and it is by these two indications that the case is recognized as cholera. The body is now below its normal temperature and so must be given "heating" foods, generally arrack (2.6) and perhaps brandy; the patient is wrapped warmly and heated however possible. Others in the hamlet feel they have no chance to placate the deity who has brought cholera, or to stop her from coming. As soon as it is known that cholera has come everybody leaves the hamlet except for the one or two relatives who tend the patient. These people clean up after him, and are careful to keep their bodies heated along with his. Although people occasionally survive cholera, they most usually die in under two days. As soon as a person dies he is taken from the house and buried, whether it be day or night. No funeral takes place at this time, and no cremation is attempted.

When the villagers know there is no longer any case of cholera in the hamlet they stay away from it for at least a further fifteen days, since they must allow the passage of the full period of fourteen days that separates the new moon from the full, or *vice versa*. Once back home, and unlike their return following a smallpox epidemic, they can immediately receive visitors from elsewhere or go anywhere themselves.

164 **MALARIA** (*adurejara*)

7.7 Malaria is considered a kind of fever, and is believed to be caught by drinking the water at places on the lower Nilgiri slopes, below the usual levels of Badaga settlement (Hockings 1974 : 210).

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763 Although the Badagas do not write wills, a dying man may make
428 a benefactory statement, each wish in it being called a *sa:la*
775 ("debt"). It is believed that if these wishes are not followed the spirit of the dead man will trouble some of his relatives. It does not possess the wrongdoer as a ghost but puts a curse on him. Since Badagas do not believe in a further reimcarnation the spirit of the dead man will be able to go to heaven if he has done enough good deeds in this life. If his dying wishes are not followed, however, he will have to remain in limbo (*eḍe lo:ka*, "the middle place"). This dismal prospect should weigh heavily on his relatives.

763 In Badaga belief a person does not die when he gives out his last
764 breath, but rather when he takes in his last breath. This breath is believed to remain in his body for the next ten days, and enables the corpse to hear and be aware of everything that is going on around it, even though the dead person cannot open the eyes, speak, or move. Thus people commonly speak to a corpse during
764 the funeral. For most Badaga phratries this ceremony involves cre-
[615] mation one or two days later, on ground several hundred meters outside the hamlet. Lingayats and children are instead buried at that place, and nowadays poor widows of various phratries may have to be buried because cremation has become quite costly (Noble and Noble 1965).

762 9.6. Suicide is by no means uncommon among the Badagas, particularly among young married women, and it is most usually accomplished by swallowing opium. Failing that, the juice from oleander

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Table 4. Death per thousand of the entire Rural Population of the Nilgiri Plateau, 1921-1930

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	Cholera	Small-pox	Plague	Fever	Dysentery/ Diarhoea	Other Causes	Total 1,000 People
Rural Coonoor taluk (1921-25)	0.20	0.30	0.10	10.20	6.10	9.40	26.40
Ditto (1926-30)	0.01	0.08	0.05	11.47	5.81	10.90	28.32
Rural Ootacamund taluk (1921-25)	0.80	0.50	0.30	21.90	4.60	10.90	38.30
Ditto (1926-30)	0.03	0.14	0.24	16.50	4.96	11.30	33.17

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Table 5. Average number of deaths per month from various causes, in the entire Nilgiri District population, 1951-1960

CAUSE	January	February	March	April	May	June	July	August	September	October	November	December	Total Deaths, (1951-1960)
Cholera	—	—	—	—	0.7	—	—	1.0	0.4	—	0.3	0.4	28
Smallpox	0.6	1.6	2.6	1.8	1.9	2.6	2.1	2.3	1.4	1.0	1.1	0.9	199
Plague	—	—	—	—	—	—	—	—	—	—	—	—	0
Fevers	48.2	55.2	62.3	61.5	77.5	78.9	78.9	64.5	52.0	55.1	55.3	53.2	7,426
Malaria	2.2	1.7	2.0	3.1	4.5	3.8	3.8	2.7	2.2	1.2	1.4	2.0	306
Dysentery/ Diarrhoea	16.7	18.1	23.8	34.5	43.5	40.3	30.3	21.1	20.9	20.5	24.9	17.1	3,137
Respirathry	57.4	48.9	58.8	56.9	65.4	60.9	64.8	59.5	56.6	58.3	62.5	60.2	7,102
Childbirth*	1.5	2.5	2.5	5.0	2.5	4.0	3.5	4.0	1.0	1.0	1.5	3.0	3200*
Total per month	128.6	128.0	152.0	162.8	196.0	190.5	183.4	155.1	134.5	137.1	147.0	136.8	18,518

(Source : Nambiar 1965: 382-83)

*These figures are rough estimates, based on the statistics available for 1959-1960 only.

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762 roots or nuts is quite effective. The common South Indian technique of jumping down a well is not possible in a terrain which has virtually no wells (Basel Mission 1853: 42; Rivers 1906: 635). In early times Badagas who wanted to take their lives swallowed the poisonous sap of the giant lobelia. Anyone whose life is ebbing and is [757] thought to have taken poison is occasionally saved by being forced to swallow soapy water: this causes him to vomit. We have already described some other techniques to bring on vomiting in 6.54.

The Causes of Death

•165 9.7. While the commonest causes of death among the Badagas are well known to public health officials, the number of deaths attributable to each is not apparent from recent statements. There are somewhat reliable figures available on causes of death for the entire rural population in Coonoor and Ootacamund *Taluks* during 1921-1930, and as these are the two sectors of the Nilgiri District where Badagas preponderate rurally the statistics can be viewed as largely referring to this community (see Table 4, based on Madras 1928: 9 and Madras 1933: 8). These statistics express average number of deaths per thousand of the rural population annually.

165 We can also cite figures of questionable reliability for the period 164 1951-1960, but again these figures (Table 5) cover the entire popu- [114] lation of the Nilgiri District, not merely the Badagas. One Nilgiri disease pattern is very clear from Table 5, namely thet the dry hot month of May and the windy monsoon months of June and July have by far the highest death rate, particularly with cases diagnosed as fevers, dysentery, and respiratory ailments. Malaria, although of little concern today, also peaks in those months. The high rate of deaths in childbirth in April, however—if these figures may by trusted—is not indicative of a high birth rate in April, and thus of a high rate of conception during the monsoon month of July, it is instead an accidental feature that characterized 1959 alone (Nambiar 1965: 381). Badagas recognize the nesting season, from the start of Tai (around October-November) till when the fledglings leave the nests (around January) as the main season of human and cattle sicknesses.

114 The reliability of these figures in Tables 4 and 5 is in question 165 because we do not know to what extent deaths occurred in the more remote Nilgiri villages that went unreported or with their

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causes not ascertained. We must also bear in mind that the Badagas made up only 21 per cent of the Nilgiri population in 1961; and they were probably somewhat healthier and better adapted to the montane climatic conditions that most lowland immigrants who have come to the plateau in recent decades as underpaid and undernourished day labourers, and whose deaths are also reflected in these statistics.

9.8. For one area of the Nilgiri District it is possible to be more specific about the causes of death among Badagas. I have located the register of deaths (among Christian Badagas) for the Parish of Ketti during the years 1892-1921. Although health conditions have improved somewhat since that period in the several dozen villages it covers, it is unique as a near-random sample (N=240) of the larger population, and its 33-year span is an important factor. A very few of the Christians listed in this register were non-Badagas or children of only one Badaga parent, but as they also lived and worked in one of the various Badaga villages which contained Christians their fate is nonetheless a good indicator of local health conditions. They have therefore been included in Table 6, (whereas five cases have been excluded because cause of death and age were omitted from those entries).

Because the register is very precise about age at the time of death, as well as stating the apparent causes of death, it should be possible to throw light on the factors responsible for the high rate of infant mortality among Badagas of that period. A cautionary note, however, is that no case histories are available, and in such situations "credit is often given to some respiratory or gastroenteric disease that may in fact have only administered the coup de grâce" (Newman 1962: 23). In particular, we may suspect that nutritional deficiencies often led to a constitutional weakness in Badaga infants which made it easy for one of the recorded maladies to take its toll.

The commonest factors in the deaths of children under one year were fever (4 boys, 9 girls), influenza (1 boy, 5 girls), whooping cough (5 boys), convulsions—usually a result of brain injury caused during the actual birth (9 boys, 7 girls), pneumonia (7 boys, 3 girls) and bronchitis (1 boy, 5 girls). The fact is that during the entire period 1892-1921, half of a total of 114 male and 126 female Christians who died—i.e., 65 boys and 62 girls—died in the first 12 months of life. In contrast, the stated number of mothers who died as a result of childbirth over this period is remarkably low (3).

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I have been able to find one register of births for Ketti Parish, that is to say, for the identical Christian population that is covered by the register of deaths, and I note that during the years 1892-1910 there were 130 live males born, and another 120 live female births (one of them being of twins). Since the succeeding register covering the years 1910-1921 is lost, I can only project these figures so as to suggest that during the entire period 1892-1921 there would have been about 416 live births in the Christian community (as compared with 240 deaths). The three mothers who died in that time thus represent a death rate for parturient women of only 0.7 per cent, which is remarkably low when compared with elsewhere in India. Thus the Mysore Gazetteer, in reference to the three Malnad Districts, a nearby hilly area not unlike the Nilgiris physically: "Quite 40 per cent of the women die during the puerperal period after confinement. When one hears the details of the treatment accorded to these unfortunate women, it is a wonder that any of them survive at all" (Hayavadana Rao 1927: 454). The same source shows on the other hand that the infant mortality rate among Badaga Christians is even higher than what was found for Mysore State: "...roughly one among five children born does not survive its first year of life" (Hayavadana Rao 1927: 459). Our Ketti Parish statistics suggest that for the period covered by the two registers one Badaga child in three—30.5 per cent—did not survive the first year.

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that the mission hospital was of considerable value, particularly during the War years, except as a place for childbirth. Badagas and others came from villages as far as twenty miles away to seek treatment, and a number of doctor's visits were made to patients in their homes as well. "When our work was first started we were confronted by opposition in some of the villages. Now opposition has disappeared and wherever we go we are welcomed. Moreover, when a patient is very ill we are often requested by Hindu Badagas to hold the patient's hand and pray to God for his or her recovery." (Ketti Medical Mission 1940: 3). From the village where K. Sithamma was born "has come the request to open a small dispensary, the villagers offering to bear part of the cost. If the way opens we shall be glad to help...." (Ketti Medical Mission 1941: 6)

Dr Simon found that the common Badaga diseases were "pneumonia, typhoid, dysentery, hill diarrhoea, malaria, rickets, intestinal parasites, tuberculosis, anaemea, food deficiency diseases, skin diseases such as scabies, ring worm etc." (Ketti Medical Mission 1951 : 3). He also recorded a few deaths among patients due to pneumonia, diphtheria, cerebral hemorrhage, and damage during birth (Ketti Medical Mission 1934: 10; 1938: 3-4; 1951: 3). This is in contrast with the situation reported a century earlier, when the most prevalent diseases were said to be "small pox, occasionally fever, and an affection of the eyes resembling ophthalmia" (Ouchterlony 1848: 65).

The inroads of scientific medicine have been such that in 1972 the informant Sithamma told me that although she used to recommend Badaga therapy as the best, she was now recommending Western medicine and hospitals to people. In her well-informed view therapists giving traditional treatment no longer know it properly: the good therapists are dying out, while younger women are not seriously interested in studying the subject. An old therapist should not teach, but simply be observed by students, and today the young are not motivated to learn in this way. The few girls she had trained in midwifery were still calling for her help whenever they had to attend a delivery.

Knowledge of Physiology

10.12. If we are to gain some further insight into Badaga conceptions of health and medicine, we need to discover their indigenous